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Parenteau et al.

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(54) **METHOD AND SYSTEM FOR ALERTING AND RETRIEVING LOST DEVICE**

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G08B 21/00 (2006.01)

(52) **U.S. Cl.**
USPC **340/686.6**; 340/539.13

(58) **Field of Classification Search**
USPC 340/686, 539.13; 455/404.2
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2013/0040600 A1* 2/2013 Reitnour et al. 455/404.2

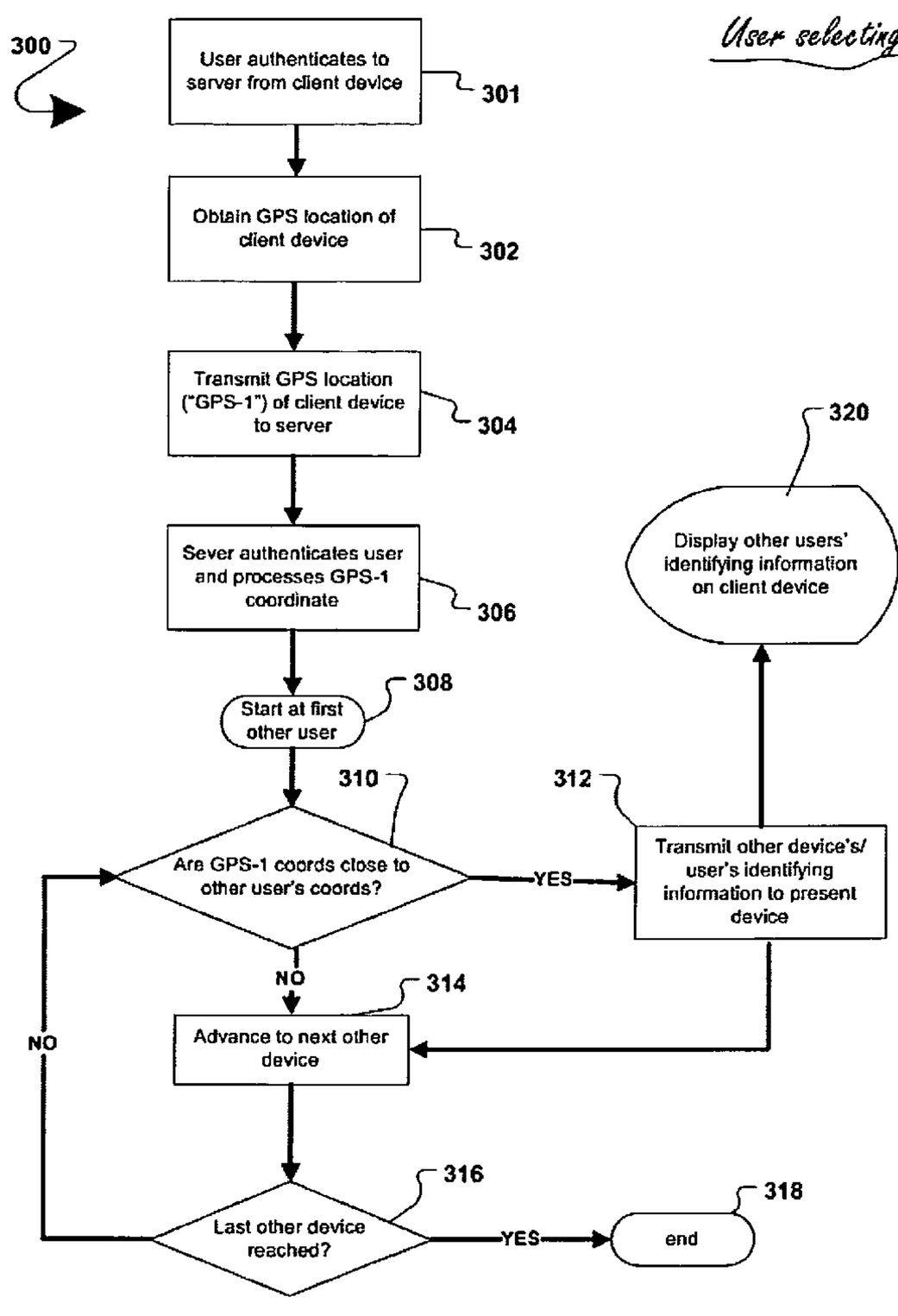
* cited by examiner

Primary Examiner — Shirley Lu

(57) **ABSTRACT**

A method for displaying point-of-interest ("POI")-related content on an electronic map, comprising: providing a first and a second electronic devices, wherein each of the electronic devices includes an application that is coupled to a digital service on the internet; logically pairing the first and second devices by the digital service; receiving a set of unique identification and GPS coordinates from the two electronic devices; computing physical distance between the electronic devices; and, in response to determining the physical distance exceeds an allowed threshold, transmitting an alarm to the electronic devices.

18 Claims, 14 Drawing Sheets



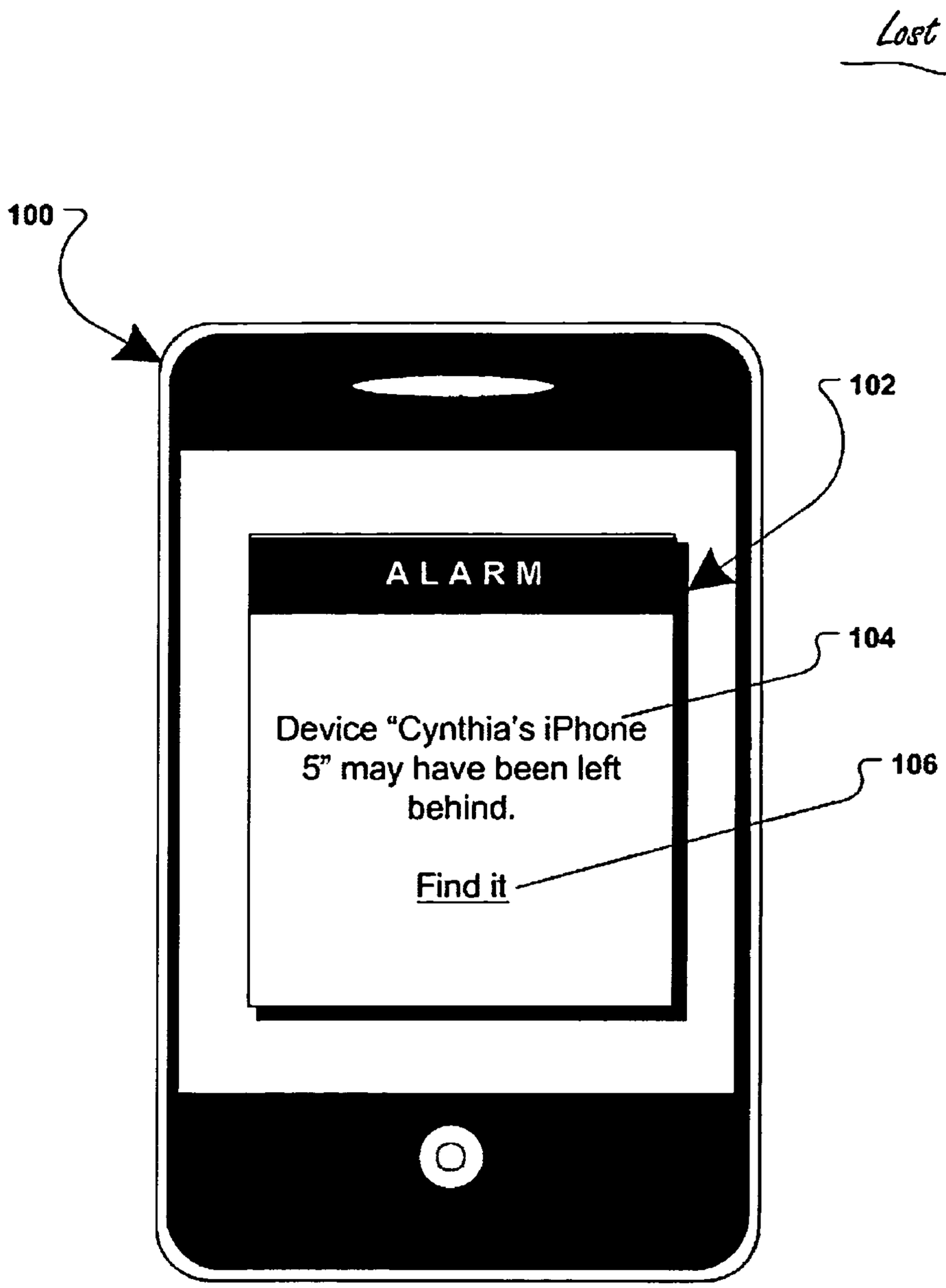

Lost device
100
102
ALARM
104
Device "Cynthia's iPhone 5" may have been left behind.
106
Find it

FIG. 1A

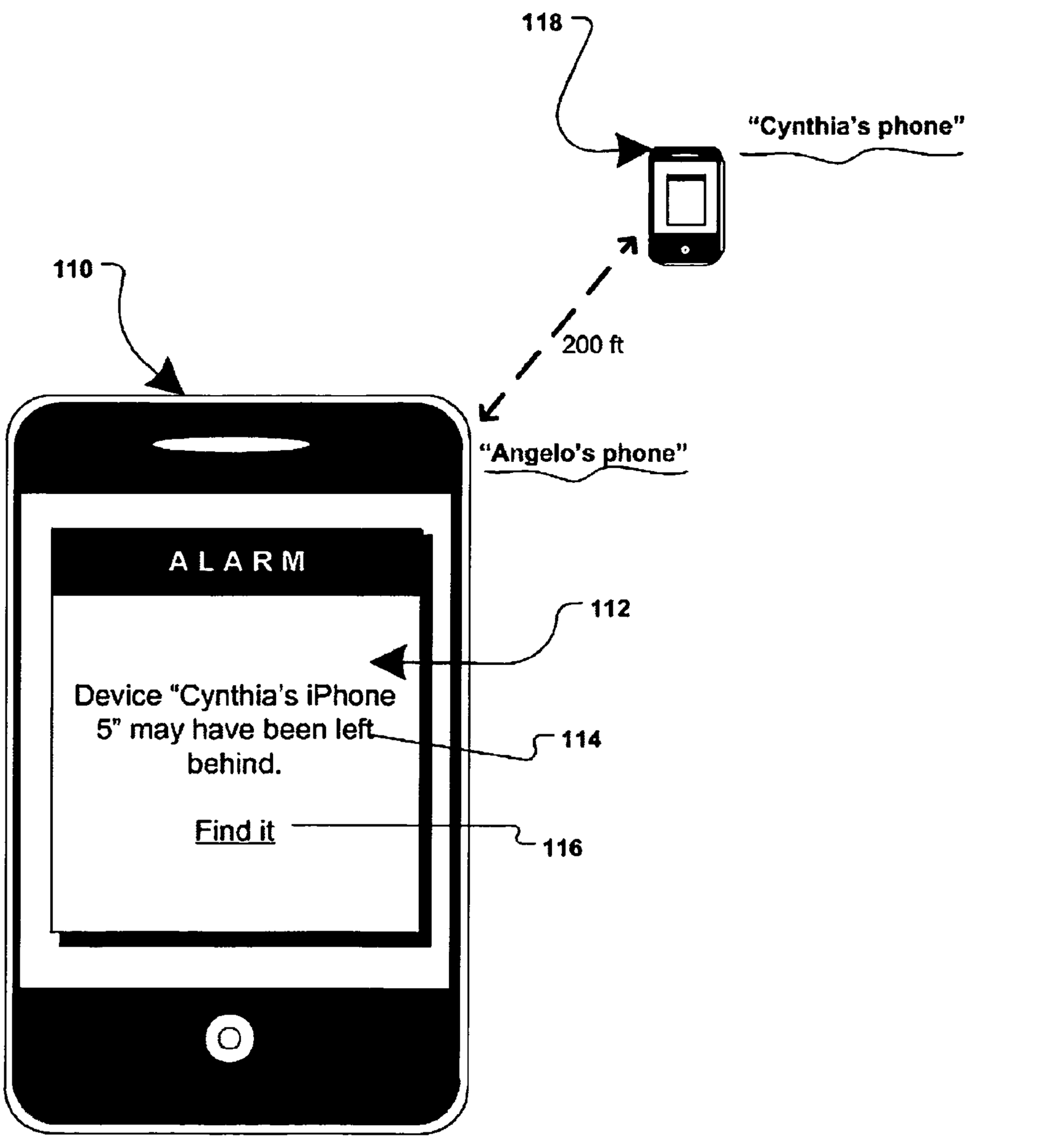

Lost device and friend's
118
"Cynthia's phone"
110
200 ft
"Angelo's phone"
ALARM
112
Device "Cynthia's iPhone 5" may have been left behind.
114
Find it
116

FIG. 1B

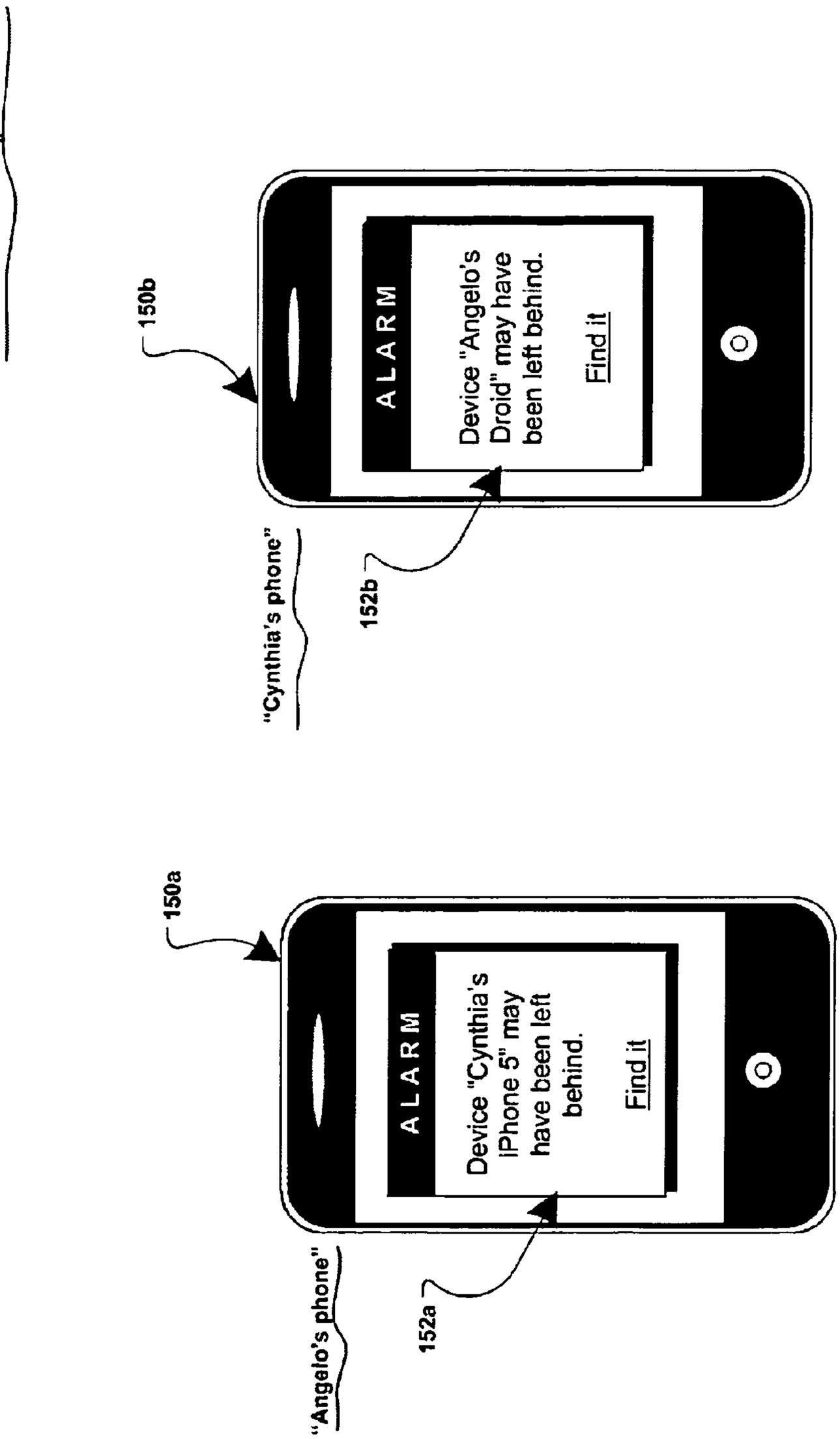

Lost device and friend's
150b
ALARM
Device "Angelo's Droid" may have been left behind.
Find it
"Cynthia's phone"
152b
150a
ALARM
Device "Cynthia's iPhone 5" may have been left behind.
Find it
"Angelo's phone"
152a

FIG. 1C

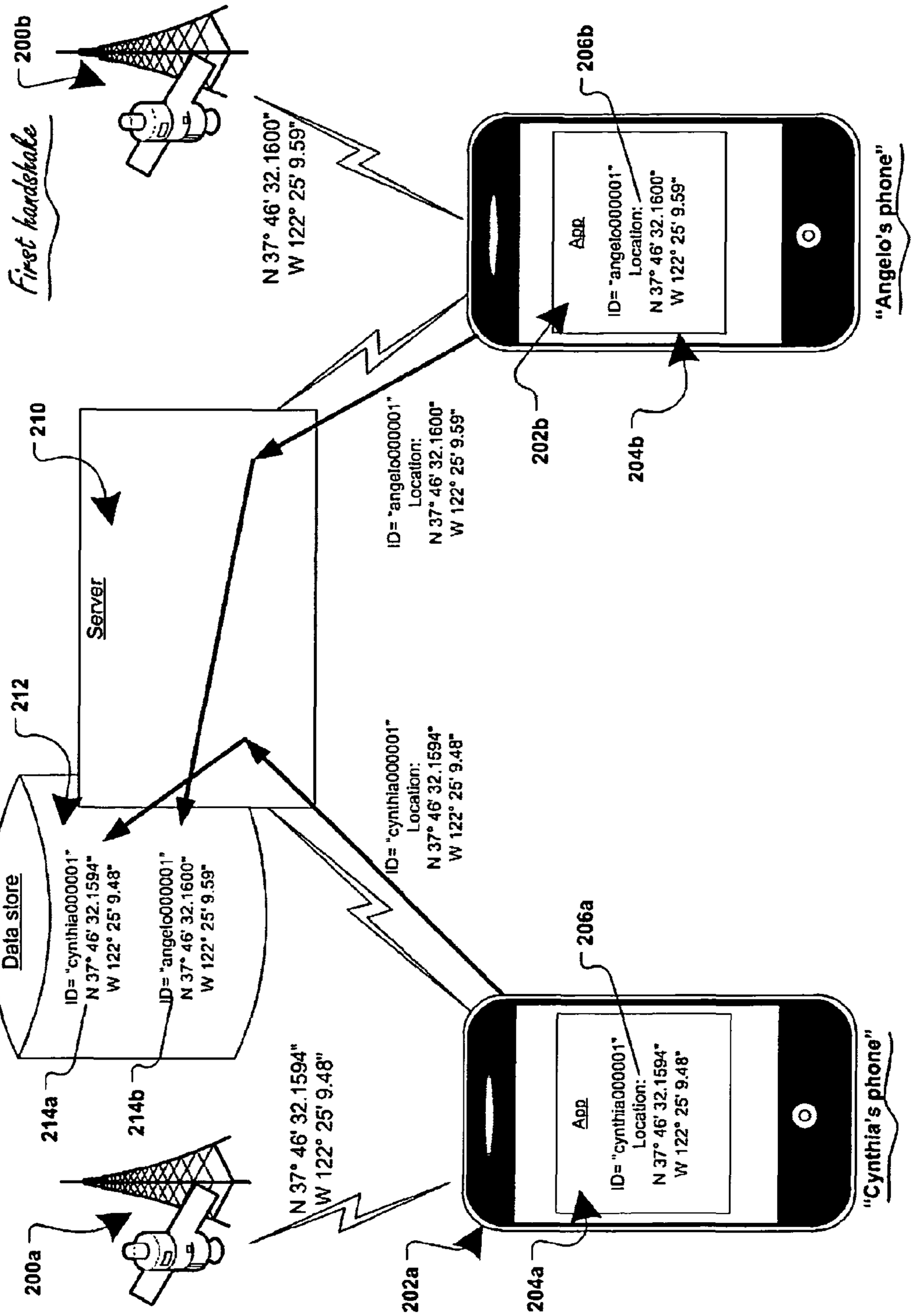

200b
First handshake
N 37° 46' 32.1600"
W 122° 25' 9.59"
206b
App
ID= "angelo000001"
Location:
N 37° 46' 32.1600"
W 122° 25' 9.59"
"Angelo's phone"
210
Server
212
Data store
ID= "cynthia000001"
N 37° 46' 32.1594"
W 122° 25' 9.48"
ID= "angelo000001"
N 37° 46' 32.1600"
W 122° 25' 9.59"
214a
214b
ID= "angelo000001"
Location:
N 37° 46' 32.1600"
W 122° 25' 9.59"
202b
204b
ID= "cynthia000001"
Location:
N 37° 46' 32.1594"
W 122° 25' 9.48"
206a
200a
N 37° 46' 32.1594"
W 122° 25' 9.48"
202a
204a
App
ID= "cynthia000001"
Location:
N 37° 46' 32.1594"
W 122° 25' 9.48"
"Cynthia's phone"

FIG. 2A

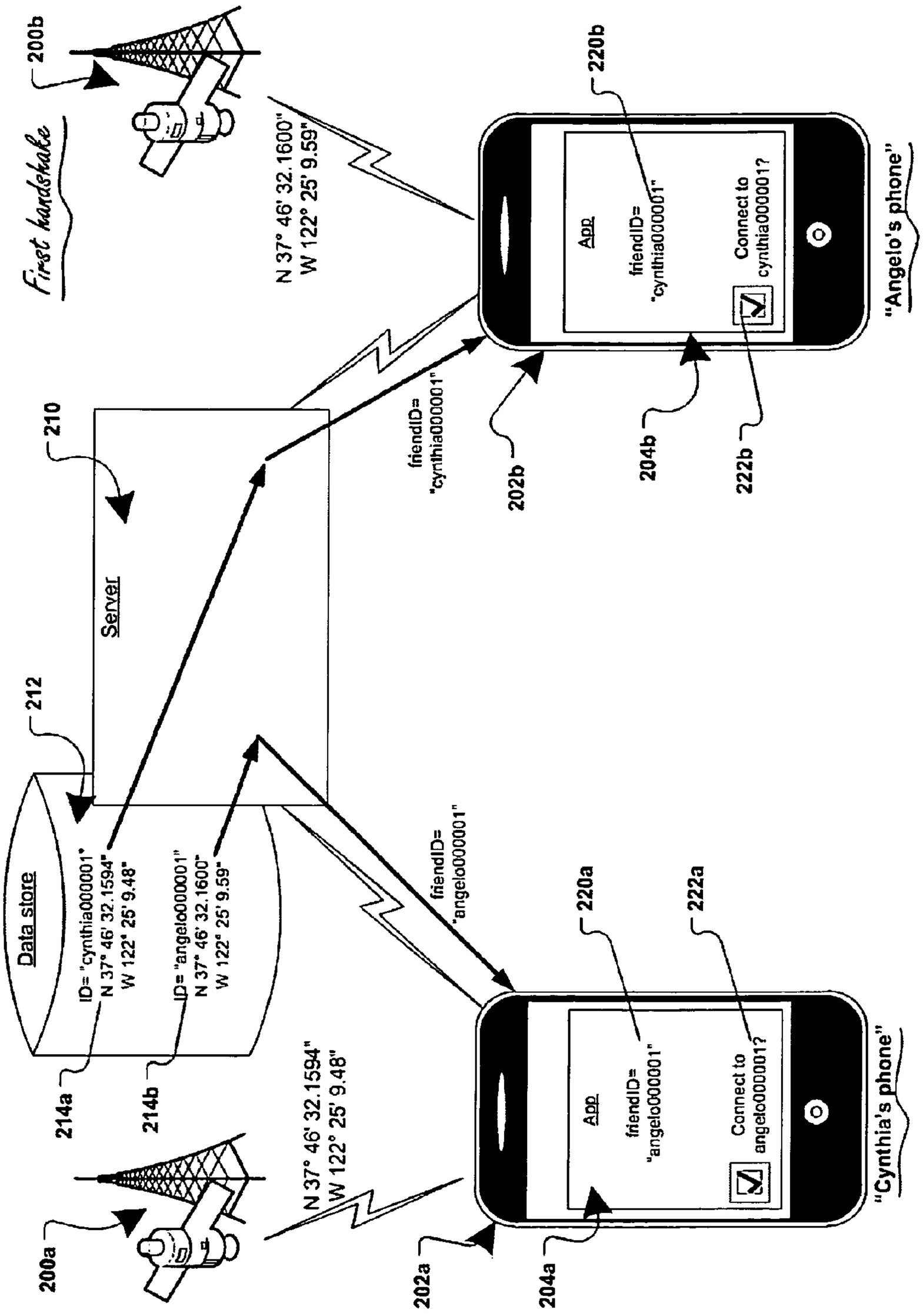

200b
First handshake
N 37° 46' 32.1600"
W 122° 25' 9.59"
220b
App
friendID=
"cynthia000001"
Connect to
cynthia000001?
"Angelo's phone"
210
Server
friendID=
"cynthia000001"
202b
204b
222b
212
Data store
ID= "cynthia000001"
N 37° 46' 32.1594"
W 122° 25' 9.48"
ID= "angelo000001"
N 37° 46' 32.1600"
W 122° 25' 9.59"
friendID=
"angelo000001"
220a
222a
214a
214b
200a
N 37° 46' 32.1594"
W 122° 25' 9.48"
202a
204a
App
friendID=
"angelo000001"
Connect to
angelo000001?
"Cynthia's phone"

FIG. 2B

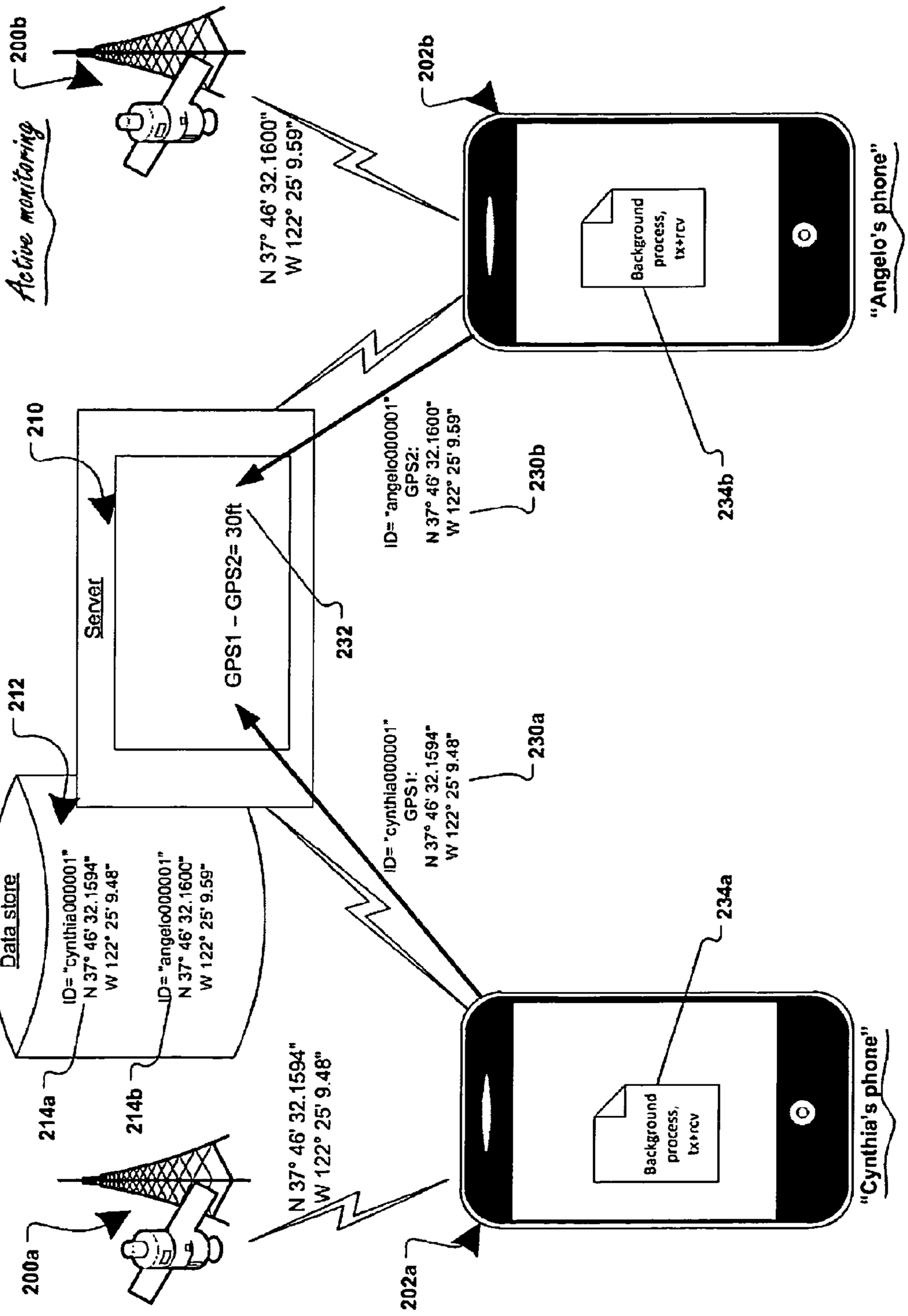

200b
Active monitoring
202b
N 37° 46' 32.1600"
W 122° 25' 9.59"
Background process, tx+rcv
"Angelo's phone"
210
Server
GPS1 – GPS2= 30ft
232
ID= "angelo000001"
GPS2:
N 37° 46' 32.1600"
W 122° 25' 9.59"
230b
234b
212
Data store
ID= "cynthia000001"
GPS1:
N 37° 46' 32.1594"
W 122° 25' 9.48"
230a
234a
ID= "cynthia000001"
N 37° 46' 32.1594"
W 122° 25' 9.48"
214a
ID= "angelo000001"
N 37° 46' 32.1600"
W 122° 25' 9.59"
214b
200a
N 37° 46' 32.1594"
W 122° 25' 9.48"
202a
Background process, tx+rcv
"Cynthia's phone"

FIG. 2C

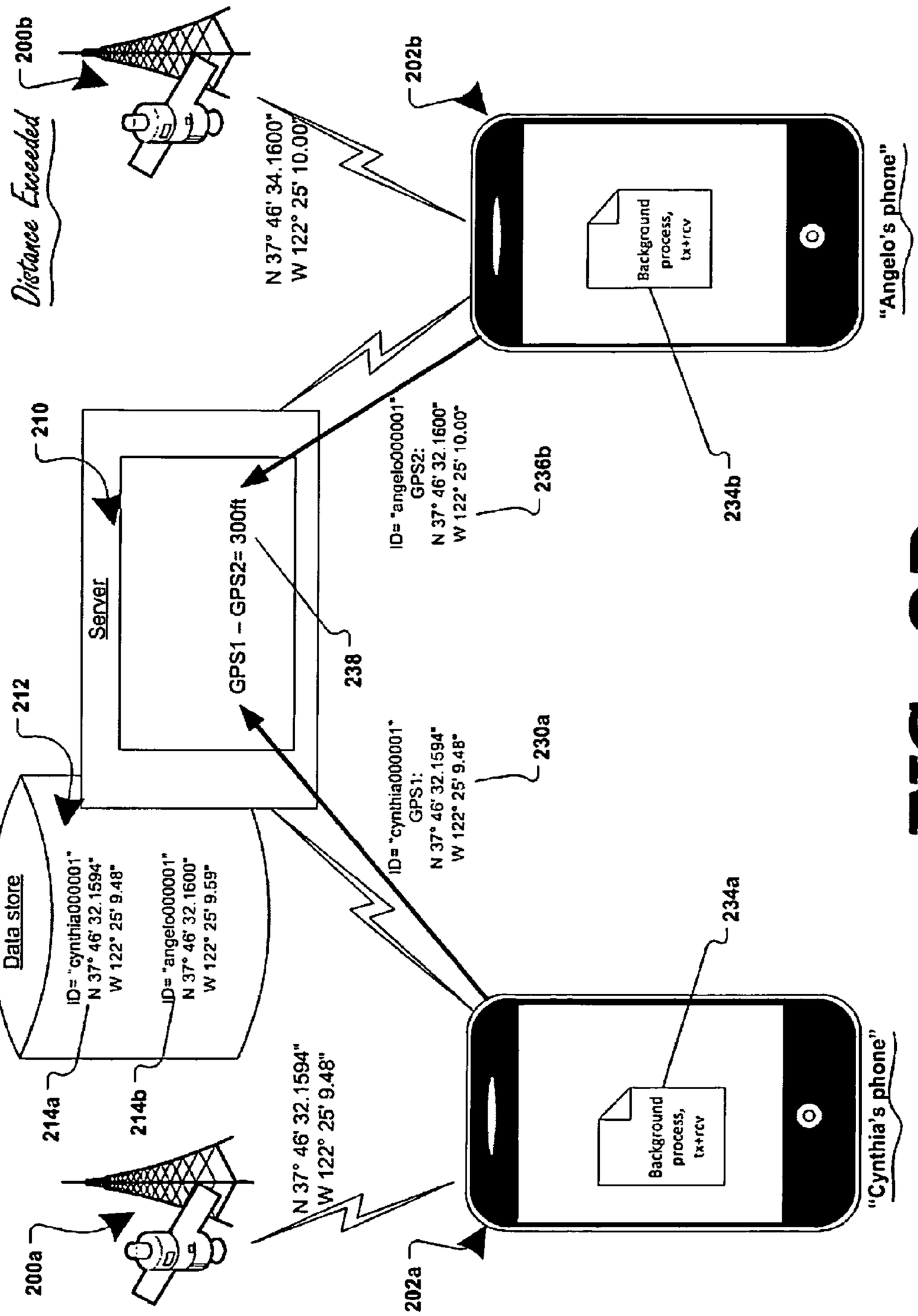

200b
Distance Exceeded
202b
N 37° 46' 34.1600"
W 122° 25' 10.00"
Background process, tx+rcv
"Angelo's phone"
210
Server
GPS1 – GPS2= 300ft
238
212
ID= "angelo000001"
GPS2:
N 37° 46' 32.1600"
W 122° 25' 10.00"
236b
234b
Data store
ID= "cynthia000001"
GPS1:
N 37° 46' 32.1594"
W 122° 25' 9.48"
230a
234a
ID= "cynthia000001"
N 37° 46' 32.1594"
W 122° 25' 9.48"
ID= "angelo000001"
N 37° 46' 32.1600"
W 122° 25' 9.59"
214a
214b
N 37° 46' 32.1594"
W 122° 25' 9.48"
200a
202a
Background process, tx+rcv
"Cynthia's phone"

FIG. 2D

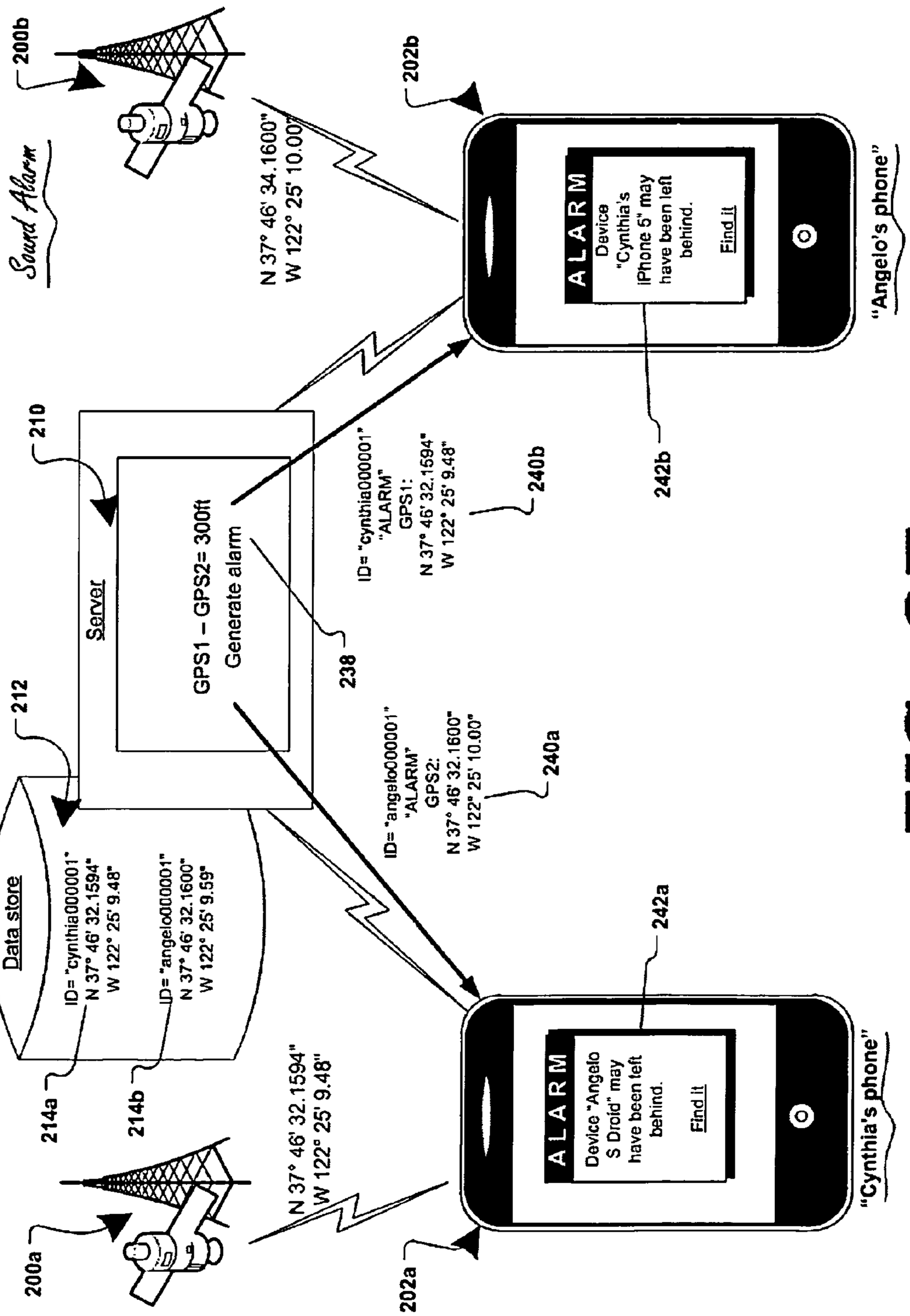

200b
Sound Alarm
202b
N 37° 46' 34.1600"
W 122° 25' 10.00"
ALARM
Device "Cynthia's iPhone 5" may have been left behind.
Find it
"Angelo's phone"
210
Server
GPS1 – GPS2= 300ft
Generate alarm
238
212
Data store
ID= "cynthia000001"
"ALARM"
GPS1:
N 37° 46' 32.1594"
W 122° 25' 9.48"
240b
242b
ID= "angelo000001"
"ALARM"
GPS2:
N 37° 46' 32.1600"
W 122° 25' 10.00"
240a
242a
214a
214b
200a
N 37° 46' 32.1594"
W 122° 25' 9.48"
202a
ALARM
Device "Angelo S Droid" may have been left behind.
Find it
"Cynthia's phone"

FIG. 2E

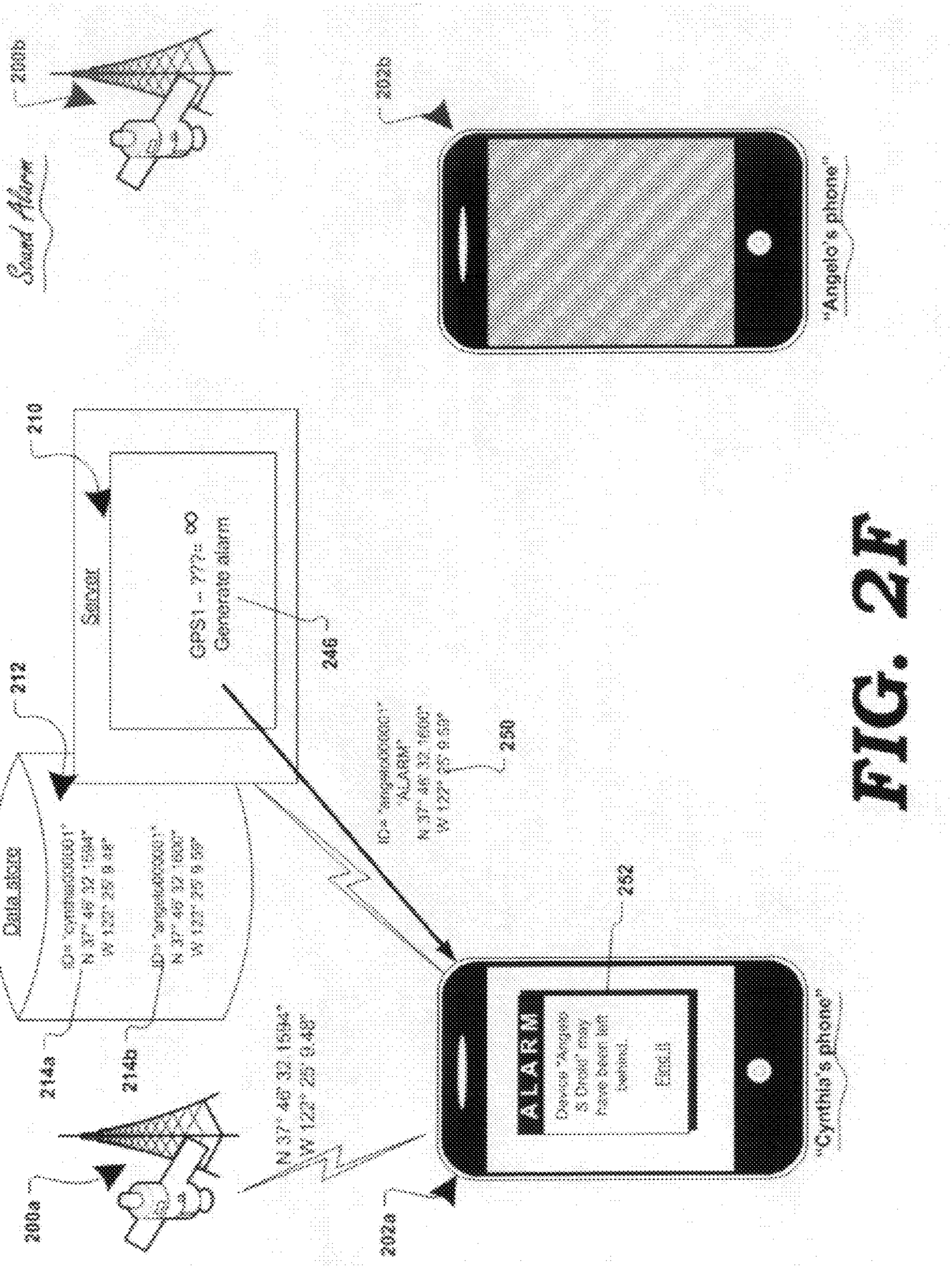

Server
Geolocation server
GPS 1 xyz
GPS 2 xyz
Data store
Cynthia's phone
Angelo's phone
ALARM
Email
Phone
Alarm type
Alarm time
Cynthia Phone
Angelo Phone
210
212
214a
214b
246
248
250
252
200a
202a
202b
N 37° 49' 30.1908"
W 122° 29' 9.48"
N 37° 49' 30.1908"
W 122° 29' 9.48"

FIG. 2F

User selecting buddies

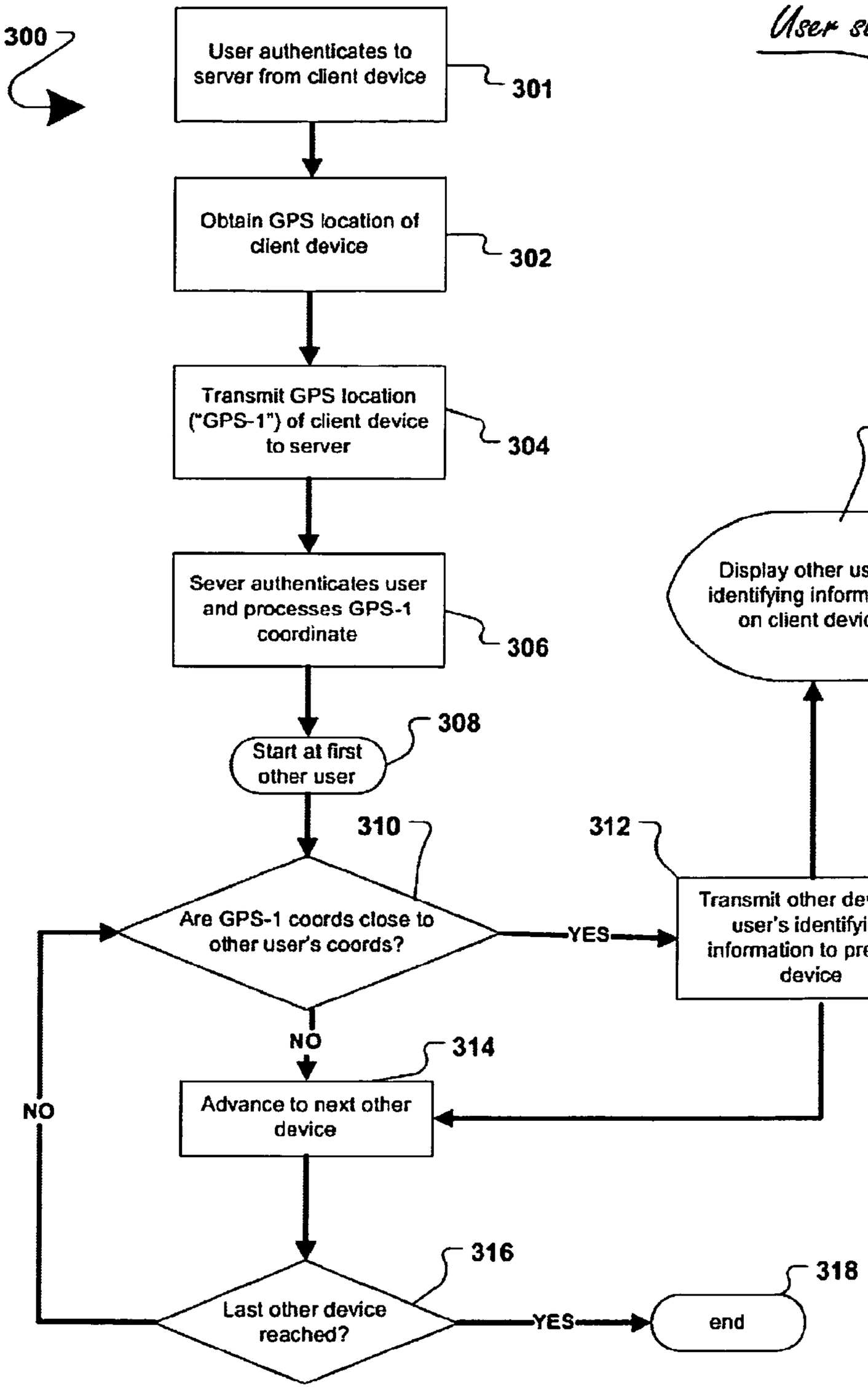


FIG. 3A

User selecting buddies

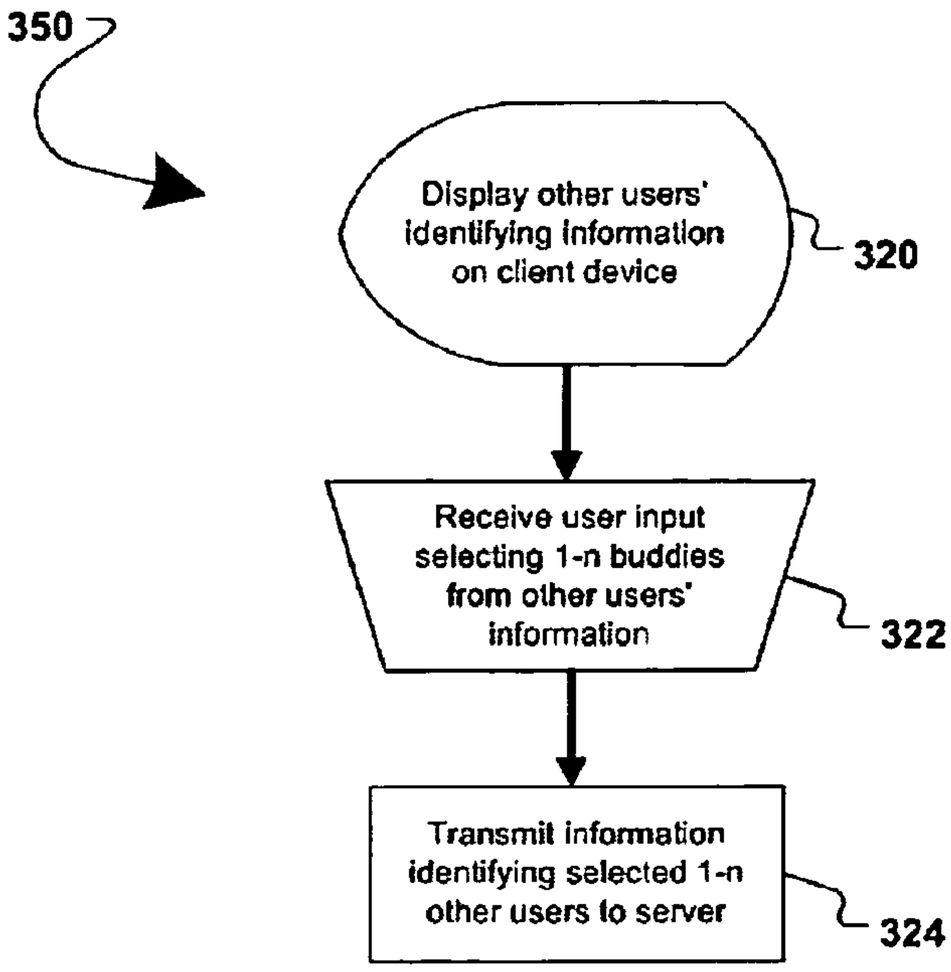


FIG. 3B

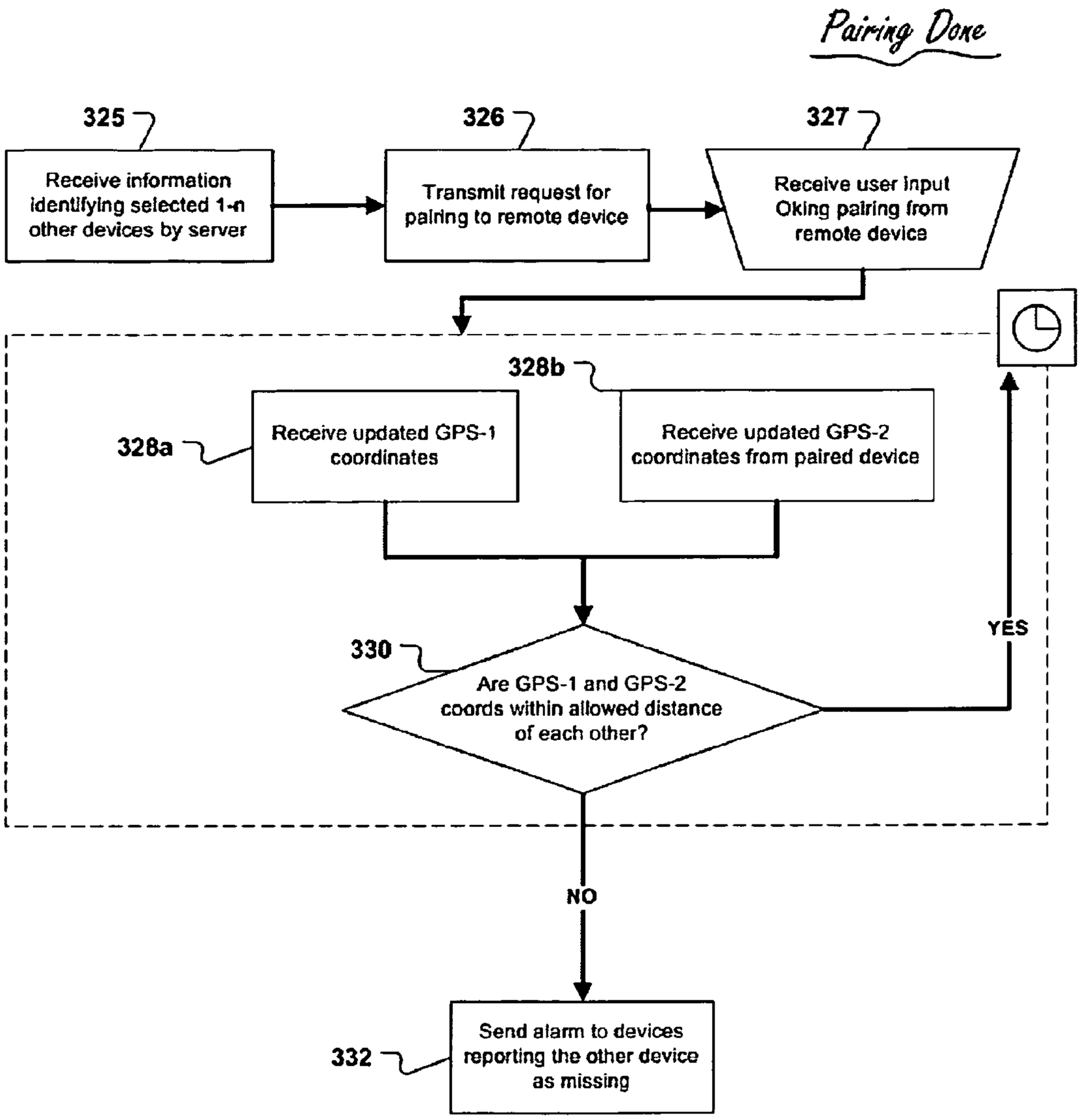

Pairing Done
325
Receive information identifying selected 1-n other devices by server
326
Transmit request for pairing to remote device
327
Receive user input Oking pairing from remote device
328b
328a
Receive updated GPS-1 coordinates
Receive updated GPS-2 coordinates from paired device
330
Are GPS-1 and GPS-2 coords within allowed distance of each other?
YES
NO
332
Send alarm to devices reporting the other device as missing

FIG. 3C

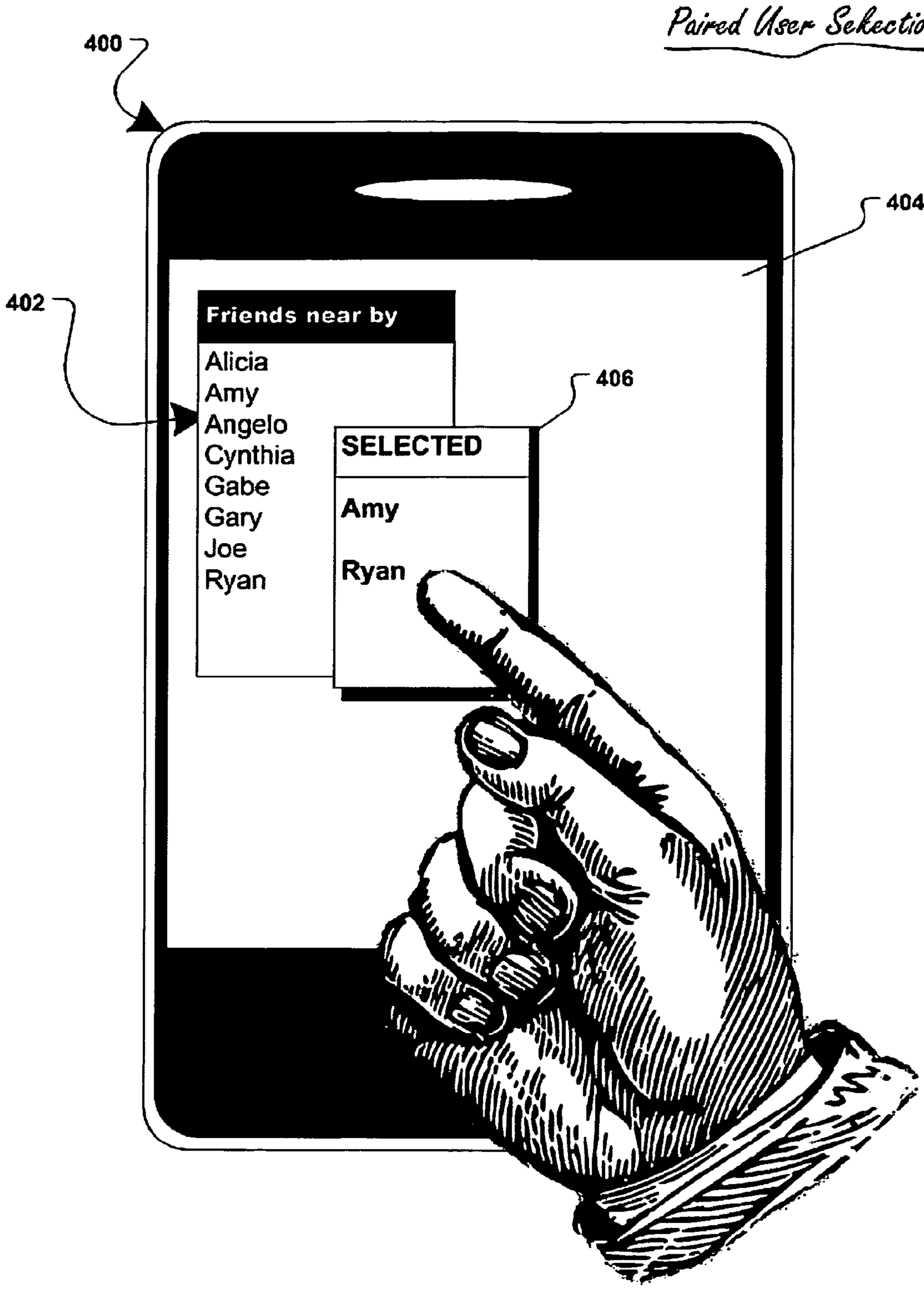

Paired User Selection
400
402
404
406
Friends near by
Alicia
Amy
Angelo
Cynthia
Gabe
Gary
Joe
Ryan
SELECTED
Amy
Ryan

FIG. 4A

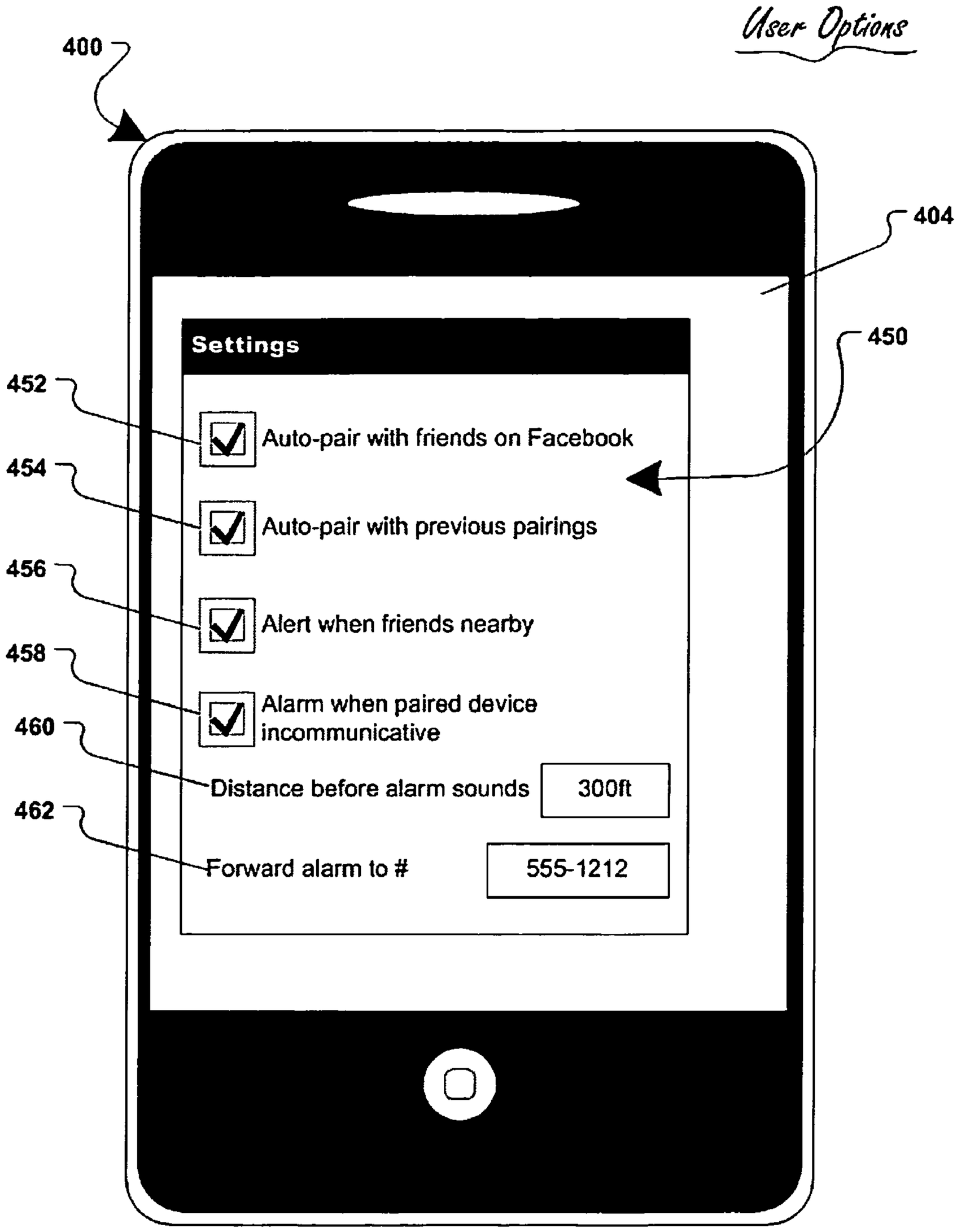

User Options
400
404
450
Settings
452
Auto-pair with friends on Facebook
454
Auto-pair with previous pairings
456
Alert when friends nearby
458
Alarm when paired device incommunicative
460
Distance before alarm sounds
300ft
462
Forward alarm to #
555-1212

FIG. 4B

METHOD AND SYSTEM FOR ALERTING AND RETRIEVING LOST DEVICE

FIELD OF INVENTION

The present invention relates to a communications system among electronic devices leading to identifications of a lost device and its recovery. More specifically, the present invention relates to a communication system between two or more electronic devices and an internet-based service, generating an alarm when a physical separation of the electronic devices occurs.

BACKGROUND OF THE INVENTION

Electronic mobile devices (e.g. Apple iPhone®, Samsung Galaxy® etc.) are prone to being separated from their owners and left behind. At present, electronic lost device recovery systems are confined to software applications (e.g. FoneFinder™, PocketFinder™, as well as services from manufacturers and service providers, etc.) which generally operate on the principle of an application on the electronic device communicating with a service on the internet, broadcasting the device's GPS location. A user who wishes to track/locate his/her device logs into such service and, assuming the electronic device is turned on and a subscribed application paired with the service is running on the device, the user is able to obtain the device's current GPS location. The main drawback of such system is in its being passive: a user needs to proactively use a separate electronic device to communicate with a system which then communicates with the lost device.

SUMMARY OF THE INVENTION

The present invention provides various methods, systems and apparatus for establishing an ad-hoc relationship between electronic devices, allowing one or more of the electronic devices to receive and display alerts notifying of a potential loss of another one of the one or more electronic devices. In contrast with the prior art, where a user needs to proactively realize that their device may be lost, and then procure another device to communicate with a system which provides information on the whereabouts of the first device, in the present invention the user is proactively alerted their device may be lost via one or more other devices (e.g. held by the user's friends) as soon as the user's device is separated from the other ("anchor", "paired") devices by distance and/or time.

Various communication protocols, such as long-polling, socket-based communication, mobile-app "push" technology, etc. may be used to facilitate communication between paired electronic devices and a service in the cloud (i.e. on the internet), wherein the service in the cloud may repeatedly obtain and compare global-positioning system ("GPS") coordinates of the paired devices, computing their physical separation and transmitting alarm messages if an allowed physical separation distance is exceeded.

DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and further advantages thereof, references are now made to the following Detailed Description, taken in conjunction with the drawings, in which:

FIGS. **1**A-**1**C are generalized block diagrams illustrating alarms displayed in an application running on an electronic device.

FIGS. **2**A-**2**F are generalized block diagrams illustrating a system interconnecting electronic devices, allowing the devices to pair and alert each other when a device becomes lost.

FIGS. **3**A-**3**C are generalized flow diagrams illustrating a method for interconnecting electronic devices, allowing the devices to pair and alert each other when a device becomes lost.

FIG. **4**A-**4**B are generalized block diagrams illustrating presenting a user of an electronic device with a selection of "buddies", i.e. owners of other electronic devices available for pairing with; and allowing the user selection of one or more devices with which to pair; and, allowing the user to set various related settings.

DETAILED DESCRIPTION

FIGS. **1**A-**1**C are generalized block diagrams illustrating alarms displayed in an application running on an electronic device. The alarm may be a visual/audio/media/electronically-transmitted queue to a person informing the person that an alarm-state has been triggered. The alarm-state may be defined as a state in which two or more paired devices have exceeded a physical distance between them; or, that at least one of the devices has lost communication with the other devices(s), or any other defined condition. Devices are said to be paired when the user(s) of the devices accepts a pairing with the other device(s), and a communications server between the devices maintains the paired state.

Referring now to FIG. **1**A, an electronic device **100** may display an alarm dialog **102** (window, application, etc.) The alarm dialog **102** may inform a user that a connection with a remote device (in this example "Cynthia's iPhone 5" **104**) has terminated abnormally. In the presently-preferred embodiment, it is not distinguished whether a remote device, e.g. **104**, has been lost, or the current device **100** has been lost—the alarm **102** is presented indication the two electronic devices, **100** and **104**, have been physically separated or at least one of the devices has stopped communicating.

Referring now to FIG. **1**B, a physical separation of an arbitrary distance (e.g. 200 ft) between two paired electronic devices: "Angelo's phone" **110** and "Cynthia's Phone" **118**, may cause an alarm **112** to be presented. In the present illustration, the alarm **112** is presented only on the device **110** for illustrative purposes only; in a real implementation, both the devices **110** and **118** may display an alarm. The distance 200 ft may be user definable. One or more users may agree on a physical distance (among other conditions) which triggers an alarm. A hyperlink "Find it" **116** (**106** in FIG. **1**A) may be displayed on the electronic device **110**, providing the user of the device with more information on where the remote device **118** may physically be.

Referring now to FIG. **1**C, both electronic devices "Angelo's phone" **150***a* and "Cynthia's Phone" **150***b* may display reciprocal alarm messages **152***a* (e.g. "Device "Cynthia's iPhone 5" may have been left behind.") and **152***b* (e.g. "Device "Angelo's Droid" may have been left behind.") respectively. Each alarm message may reference the paired device deemed lost. In other possible implantations, the two alarms may be different (e.g. due to user customization, etc.)

Please note that it is unlikely to be determined which of the two devices is technically "lost"; therefore, both devices may display a message whereas to a human owner, only one of the devices may technically really be "lost". In other possible embodiments, a more precise determination of which of the devices may really be "lost" using various method, for example assuming a device that has not been physically

moved is the "lost" device, under the assumption that the device that has been physically moved is with the owner, who has physically changed location, thus leaving the "lost" device behind.

FIGS. **2**A-**2**F are generalized block diagrams illustrating a system interconnecting electronic devices, allowing the devices to pair and alert each other when a device becomes lost. Electronic devices may use various technologies (e.g. push notifications, AJAX calls, etc.), means and protocols (e.g. TCP/IP, cell communication protocols, etc.) to communicate with each other via a central server. In the presently-preferred embodiment, the central server may be a service remote to both electronic devices, whereas in other possible embodiments communication between devices may be direct (e.g. Bluetooth pairing.)

Referring now to FIG. **2**A, two electronic devices: "Cynthia's phone" ("first electronic device") **202***a* and "Angelo's phone" ("second electronic device") **202***b* may be paired. The two devices may run applications **204***a* and **204***b* respectively, where the applications **204***a* and **204***b* run on an operating system (e.g. iOS®, Android®, etc.) and are used to facilitate a communication between the electronic devices and a central server **210**.

The first electronic device **202***a* may receive its geographic locations (e.g. GPS coordinates N 37° 46' 32.1594" W 122° 25' 9.48") from a GPS provider **200***a* (e.g. a cellphone tower, a GPS satellite, etc.) Similarly, the second electronic device **202***b* may receive its geographic locations (e.g. GPS coordinates N 37° 46' 32.1600" W 122° 25' 9.59") from a GPS provider **200***b* (e.g. a cellphone tower, a GPS satellite, etc.)

The first and second electronic devices may communicate with a server **210** through a cellular, or any other communications network. The applications **204***a* and **204***b* running on the first and second electronic devices, **202***a* and **202***b* respectively, may communicate with the server **210** via the operation systems on their respective electronic devices. The server **210** may have access to a data store **212** for storing information related to the electronic devices in communication with the server **210**.

The server **210** may receive information identifying the first electronic device **202***a* and including its GPS coordinates. For example, "ID="cynthia000001" Location: N 37° 46' 32.1594" W 122° 25' 9.48"" may be information **206***a* included with the first device **202***a* and transmitted to the server **210**. Similarly, "ID="ID="angelo000001" Location: N 37° 46' 32.1600" W 122° 25' 9.59"" may be information **206***b* included with the second device **202***b* and transmitted to the server **210**.

The server **210** may then store the device information **206***a* and **206***b* as storable information **214***a* and **214***b*, respectively, in the data store **212**. The first and second electronic devices may receive their own individual GPS coordinates at various frequencies; and, may transmit their identifying information and GPS coordinates to the server **210** at other various frequencies.

Referring now to FIG. **2**B, the server **210** may relay information of the first and second electronic devices, to each other. The stored information pertaining to the first electronic device **214***a* may be transmitted to the second electronic device **202***b*. Similarly, the stored information pertaining to the second electronic device **214***b* may be transmitted to the first electronic device **202***a*. Such transmission may be initiated for many reasons, among which are: the users of the two electronic devices are connected through a social network, e.g. Facebook®; and/or the two electronic devices are physically close to each other as determined by the server **210** given the devices' GPS coordinates, etc.

The first electronic device **202***a* may display to its user an invite to pair with the second electronic device **202***b*, the invite **204***a* may contain information **220***a* identifying the second device (e.g. "friendID="angelo000001"); as well as displaying a graphical way for the user to choose to initiate the pairing, illustrated here as a checkmark (or button or any other means of selection **222***a*).

Similarly, the second electronic device **202***b* may display to its user an invite to pair with the first electronic device **202***a*, the invite **204***b* may contain information **220***b* identifying the first device (e.g. "friendID="cynthia000001"); as well as displaying a graphical way for the user to choose to initiate the pairing, illustrated here as a checkmark (or button or any other means of selection **222***b*). In various implementations either one of the users, or both users, would need to choose to pair their devices for pairing to be initiated.

Once the two electronic devices **202***a* and **202***b* are actively paired, each device may transmit its updated GPS coordinates, **230***a* and **230***b*, respectively, to the server **210**, at various intervals and/or in response to various events. The server **210** may compare the GPS coordinates **230***a* and **230***b*, for example by calculating the distance **232** (e.g. 30 feet) between the two sets of GPS coordinates.

In one presently-preferred embodiment, applications on the client devices that comprise the present invention, may operate as background services **234***a* and **234***b*, on their respective electronic devices **202***a* and **202***b*, allowing these devices to serve other content to their users with little or no visual interruption to their users (until an alarm is displayed).

FIG. **2**D illustrates a situation where the distance **238** between the two electronic devices, **202***a* and **202***b*, is determined to be 300 feet. The distance **238** may be determined by the server **210** comparing the GPS coordinates of two paired devices: **202***a* transmitting its GPS coordinates as "GPS1:N 37° 46' 32.1594"W 122° 25' 9.48" **230***a*, and **202***b* transmitting its GPS coordinates as "GPS2:N 37° 46' 32.1600"W 122° 25' 10.00" **230***b*. Accordingly, new GPS coordinates may be updated in the data store **212**, which would allow tracking of devices over time.

A computed distance **238** greater than a certain threshold (e.g. **300** feet where a threshold is 100 ft), may trigger an alarm. Referring now to FIG. **2**E, the server **210** may raise an alarm state, transmitting messages to the first and second paired devices. For example, the first electronic device **202***a* may receive an alarm message like "Device "Angelo's Droid" may have been left behind." **242***a*. Additional information, such as a possible location of the second device, derived from the data **240***a* "ID="angelo000001" "ALARM" GPS2:N 37° 46' 32.1600"W 122° 25' 10.00" may be displayed to the user of the first device.

Similarly, the second electronic device **202***b* may receive an alarm message like "Device "Cynthia's iPhone 5" may have been left behind." **242***b*. Additional information, such as a possible location of the second device, derived from the data **240***b* "ID=cynthia000001""ALARM"GPS1:N 37° 46' 32.1594"W 122° 25' 9.48"" may be displayed to the user of the second device.

In one preferred embodiment of the present invention, illustrated in FIG. **2**F, an alarm may be sent in response to an interruption in communication between paired devices. For example, if the battery of a device dies, or the device is stolen and/or turned off, an alarm sounds on one or more paired devices.

For example, electronic device "Angelo's phone" **202***b* may be incommunicative to the server **210** (for various possible reasons: it has been turned off, as result of OS/application error, network/communication issues, etc.) Upon not

receiving communication from the electronic device "Angelo's phone" **202***b*, the server **210** may generate an alarm **246** and broadcast the alarm to all devices paired with the device **202***b*. In this illustration, the electronic device "Cynthia's phone" **202***a* may receive an electronic communication **250** (e.g. ID="angelo000001" "ALARM" N 37° 46' 32.1600" W 122° 25' 9.59"), causing device **202***a* to display a message to its user indicating a paired device may have been lost (e.g. the message **252** to the user of the device **202***a* may read "Device "AngeloS Droid" may have been left behind. Find it")

In alternate related embodiments, the message **252** to the user may include one or more of the following: the last known location of the remote paired device **202***b* (e.g. retrieving data storing the location **214***b* of the remote paired device **202***b* in the data store **212**), and/or a hyperlink such as the words "Find It" allowing the user of the device **202***a* to be guided to the last known location of the remote device **202***b*, etc.

FIGS. **3**A-**3**C are generalized flow diagrams illustrating a method for interconnecting electronic devices, allowing the devices to pair and alert each other when a device becomes lost. While many various ways of interconnecting electronic devices may exist (e.g. Bluetooth technology), the present preferred embodiment discloses a pairing via a server two or more electronic devices are in communication with.

Referring now to FIG. **3**A, flow diagram **3**A illustrates a user of an electronic device being displayed a list of potential "buddies", i.e. other electronic devices within physical proximity that the user's device could be paired with. At step **301**, the user's device may authenticate to a server (service),e.g. by logging in with known credentials, social-network credentials, etc.

At step **302**, the electronic device may obtain its GPS coordinates/location (e.g. from a GPS service, satellite, cell-communication network, etc.), and transmit its GPS location ("GPS-1") to the remote server at step **304**.

At step **306**, the server may authenticate the electronic device and receive its GPS-1 location. At steps **308-316**, the server may traverse a list of other electronic devices, determining the electronic devices who geographic location is proximate to the present electronic device.

At step **308**, the server may examine GPS coordinates of a first electronic device that had transmitted its GPS coordinates to the server, and at step **310** it may be determined whether the GPS coordinates of the first electronic device are within a physical proximity (could be a user setting, e.g. 100 ft) to GPS-1.

If it is determined at step **310** that the GPS coordinates of the first electronic device are within physical proximity of the present electronic device's GPS-1 coordinates, at step **312** information depicting the first electronic device (e.g. its device ID, user name and any other information identifying the first electronic device and/or its user and/or its GPS coordinates) may be transmitted to the present electronic device at step **312**.

If it is determined at step **310** that the physical GPS coordinates of the first device are not sufficiently close to the GPS-1 coordinates of the present device, at step **314** the GPS coordinates of the next electronic device which had reported its GPS coordinates to the server, may be compared to the GPS-1 coordinates. Steps **310-314** may be repeated until it is determined, at step **316** that all GPS coordinates of all electronic devices have been compared with GPS-1, and at step **318**, this flow may end.

Information transmitted at step **312** may be displayed to the user of the first electronic device at step **320**. Referring now to FIG. **3**B, information on devices and/or users-of-the-devices whose geographic coordinates are close to the GPS-1 coordinates of the present device, may be displayed at step **320**. At step **322**, input from the user of the present device may be received selecting one or more of the remote devices at step **320**, with which to pair.

In alternate embodiments, further information and considerations may be factored into the logic of device pairing, such as devices that had been paired in the past, devices of users who are friends on a social network, etc.

At step **324** information inputted from the user at step **322**, selecting the one or more other devices to be paired with, may be transmitted back to the server. Referring now to FIG. **3**C, once logical pairing has been established, at step **325** where the server receives the input from the user of the present device, at step **326** a request for pairing may be sent to one or more users of the remote devices the user of the present device chose to pair with. At step **327**, an OK may be received from one or more of the users of the remote devices (in this example, a single remote device OKs the pairing at step **327**.)

At steps **328***a* and **328***b*, communications may be received by the server from all paired devices, in this example, the present device, transmitting its location as GPS-1, and the remote device, transmitting its location as GPS-2. The communications received by the server at steps **328***a*&**238***b* may be initiated by the devices at pre-determined frequencies, or generated according to any other algorithm.

At step **330**, a calculation may be made determining the geographic distance between the reported locations of the electronic devices, in this example, the distance between GPS-1 and GPS-2 may be computed and a determination may be made whether the two electronic devices are within allowed distance of each other. If it is determined the two electronic devices are not within an allowed distance (or other conditions prompting alarm, such as one of the devices not sending a communication over a certain allotted time span), at step **332** an alarm communication may be sent to both devices.

In various possible embodiments, the alarm communications may be sent out using "push notifications" and/or utilizing a polling mechanism wherein a client device polls the server for new messages. In other possible embodiments, more than two devices may be involved, and some of the devices may not be cellular or handheld. For example, an iPad® and an iPhone® carried by one or more people may be paired.

FIG. **4**A-**4**B are generalized block diagrams illustrating presenting a user of an electronic device with a selection of "buddies", i.e. owners of other electronic devices available for pairing with; and allowing the user selection of one or more devices with which to pair; and, allowing the user to set various related settings.

Referring now to FIG. **4**A, the user of an electronic device **400** may be displayed a list of friends nearby **402** within an application **404** running on the electronic device **400**. The list of friends nearby **402** may be a dynamically-generated list of names, associated with electronic devices used by users whose names are listed, that are determined to be physically close to the electronic device **400**, and/or contain names of friends of the user of the electronic device **400**. Friends may be defined as social-network friends and/or people with whom the user of the electronic device **400** had previously paired, etc.

The user of the electronic device **400** may choose one or more friends **406** with whose devices the user's electronic device **400** is logically paired. In this example, electronic devices associated with "Amy" and "Ryan" are logically

paired with the electronic device **4001**; hence, a physical separation of any of the three electronic devices would create an alarm.

Referring now to FIG. **4**B, a list of user settings **450** may be presented to a user of the electronic device **400**. In one presently preferred implementation, the user settings may include: a setting allowing a user to automatically pair with their Facebook® friends **452**, provided devices used by their Facebook (or any other social network) friends are in physical proximity and registered with a service provider providing the service of the present invention.

Another user setting may allow for automatic pairing to devices that had been paired before **454**. For example, if the electronic device **400** had been previously paired with a device "Cynthia's iPhone 443ABC", next time the electronic device "Cynthia's iPhone 443ABC" registers with the service and reports its location to be in close proximity with the electronic device **400**, automatic pairing of the two devices may be established via the setting **454**.

Another possible setting is alerting when friends (i.e. social network friends, etc.) are nearby via option **456**. Devices registering their GPS coordinates and reporting their unique identifiers and/or their user identifiers that are determined to be in close physical proximity, may generate an alert requesting a pairing.

Another possible setting is sounding an alarm when a paired device becomes incommunicative **458**. Once two or more devices are logically paired, according to this setting, if one or more of the paired devices stops transmitting its location for a given period (e.g. its battery died, it has been turned off, etc.) an alarm is transmitted to all the paired devices.

Another possible setting is a threshold distance between paired devices before an alarm is sounded **460**. Users may want to adjust the threshold distance depending on situations. For example, users sitting together in a taxi cab may set the threshold distance to be very close, e.g. 3 feet, since the two users may not be separated by more than that distance without leaving the cab, which is when the alarm should sound. On the other hand, the same users being at a trade show may allow themselves a much greated distance, e.g. 1000 ft separation, before an alarm sounds.

Another possible setting is an ability to forward an alarm to a different device **462** via a phone number, or any other messaging system. For example, the use of the electronic device **400** may input the phone number of a land-line phone to automatically be called when an alarm is generated.

What is claimed is:

1. A method for alerting users of electronic devices when the electronic devices become physically separated from one another by more than an allowed distance, the method including:

providing a first and a second electronic devices, wherein each of the electronic devices includes an application that is coupled to a digital service on the interne and a display for displaying alerts;

receiving a first set of unique identification and global position system ("GPS") coordinates from the first electronic device, wherein the first set from the first electronic device is received by the digital service;

receiving a first set of unique identification and GPS coordinates from the second electronic device, wherein the first set from the second electronic device is received by the digital service;

determining the first electronic device and the second electronic device are logically paired;

setting a threshold maximum allowed physical separation distance between the first and the second electronic devices;

computing a first physical distance between the first GPS coordinates and the second GPS coordinates and determining the first physical distance is less than the threshold maximum allowed physical distance;

receiving a second set of unique identification and GPS coordinates from the first electronic device and a second set of unique identification and GPS coordinates from the second electronic device;

computing a second physical distance between the first GPS coordinates and the second GPS coordinates and determining the second physical distance is greater than the threshold maximum allowed physical distance;

in response to determining the second physical distance is greater than the threshold maximum allowed physical distance, transmitting an alert message to the first and to the second electronic devices; and

displaying the alert message on the display of the first and the display of the second electronic devices.

2. The method of claim **1**, wherein at least one of the electronic devices is a mobile phone.

3. The method of claim **1**, wherein at least one of the first or the second GPS coordinates are obtained from a cellular communications network.

4. The method of claim **1**, wherein at least one of the first or the second GPS coordinates are obtained from a GPS satellite.

5. The method of claim **1**, wherein the threshold maximum allowed physical separation distance is set by at least one of: a user of the first electronic device or a user of the second electronic device.

6. The method of claim **1**, wherein at least one of: the first unique identification or the second unique identification includes a name of a user of the first and/or the second electronic device.

7. The method of claim **6**, wherein the user of the first electronic device and the user of the second electronic device are aware of one another by name prior to step of determining the first electronic device and the second electronic device are logically paired.

8. The method of claim **7**, wherein at least one of the user of the first electronic device and/or the user of the second electronic device are required to confirm the logical pairing of the first and the second electronic devices.

9. The method of claim **7**, wherein the logical pairing occurs automatically if it is determined that the user of the first and the user of the second electronic devices are friends on a social network.

10. The method of claim **7**, wherein the logical pairing occurs automatically if it is determined that the user of the first and the user of the second electronic devices had pre-approved automatic logical pairing.

11. The method of claim **1**, wherein at least one of the first set or the second set of the unique identification and GPS coordinates are transmitted to the digital service at pre-determined intervals.

12. The method of claim **1**, wherein at least one of the first set or the second set of the unique identification and GPS coordinates are transmitted to the digital service in response to a request by the digital service.

13. The method of claim **1**, wherein a data store is implemented by the digital service for storing at least one of the first set or the second set of the unique identification and GPS coordinates.

14. The method of claim **13**, wherein the data store is implemented by the digital service for storing subsequent sets of unique identification and GPS coordinates.

15. The method of claim **14**, wherein in response to a request by at least one of the first or the second electronic devices, the stored subsequent sets are transmitted to the at least one of the first or the second electronic devices.

16. The method of claim **1**, wherein the first and/or the second electronic device receiving the alert message plays an audible media.

17. The method of claim **1**, wherein more than two electronic devices are logically paired.

18. The method of claim **1**, wherein electronic messages between the digital service and the first and/or the second electronic devices are transmitted via push technology.

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